



# UNITED STATES PATENT AND TRADEMARK OFFICE

CLM  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,198	03/24/2006	Kazunori Tanaka	Q93230	1919
23373	7590	11/02/2007	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			DESAI, NAISHADH N	
		ART UNIT	PAPER NUMBER	
		2834		
		MAIL DATE	DELIVERY MODE	
		11/02/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/573,198	TANAKA ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Naishadh N. Desai	2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) Responsive to communication(s) filed on 10 August 2007.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) Claim(s) 1-12 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-12 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a) All    b) Some \* c) None of:
      1. Certified copies of the priority documents have been received.
      2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
      3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____.   | 6) <input type="checkbox"/> Other: _____.                         |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. As per independent claim 1:

A stator in a rotating electric machine (Fig 1 shows the stator structure of rotating electric machine), the stator comprising(Fig 1,1);  
a stator core(Fig 1,1) provided with plural slots(the abstract speaks of an iron core(element 1) having plural slots) in an inner peripheral surface (Fig 1 shows a stator structure with plural slots in an inner peripheral surface);  
and a stator winding disposed inside each of the plural slots, wherein (Fig 1 shows a stator structure wherein windings are disposed inside the slots);

each slot of the plural slots has a slot peripheral wall (Fig 1, side wall) and a slot opening that opens in the inner peripheral surface (Fig 1, slot opening):

the slot peripheral wall of each slot has a slot bottom wall (Fig 1, bottom wall) and a pair of slot side walls opposing to each other and continuing to the slot bottom wall (Fig 1, side walls are opposing each other and continues to the bottom wall):

the slot peripheral wall is covered with ~~an insulation coating made of an a sprayed powder coating of an~~ electrical insulation material(Fig 1,3 shows an insulation material

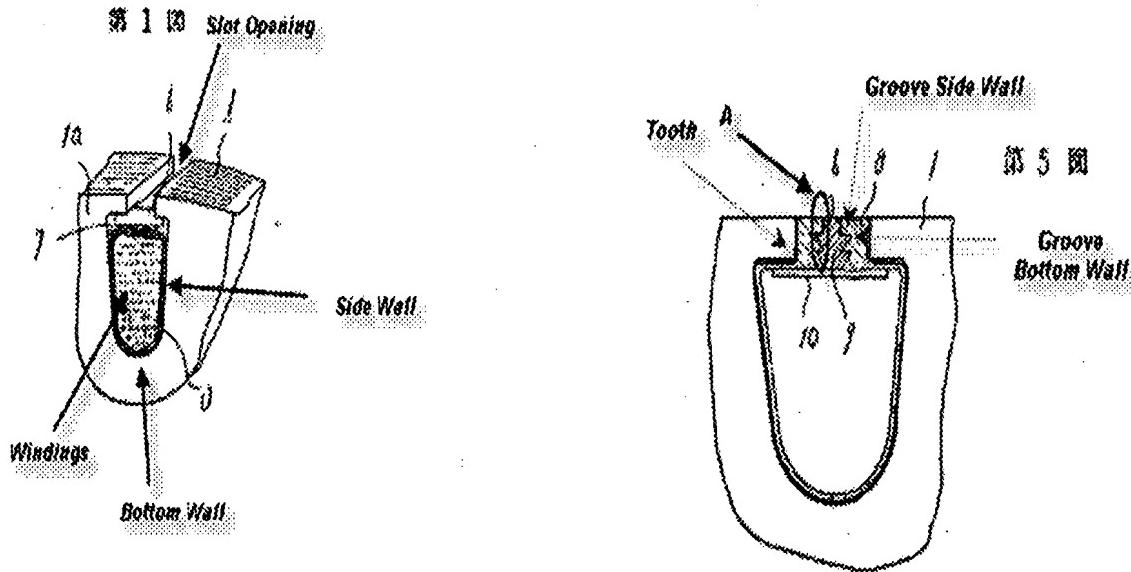
covering the slot walls, **also the method of forming or applying the insulation material is not germane to the issue of patentability of the device itself**):

the insulation coating(Fig 1,3 is an insulation material) is formed over continuously from the slot bottom wall to the pair of slot side walls (Fig 1 shows element 3(insulation material) covering continuously from the bottom wall to the slot side walls):

a pair of holding grooves opposing to each other is formed of cuts into in the insulation coating on the pair of slot side walls at the vicinity of the slot opening (Fig 5, 9 shows a pair of grooves opposing each other formed in the insulation(**element 8**) and located by the opening of the slot and between the wedge (element 6). **It also clearly shows the grooves to be formed of cuts into the insulation**):

groove walls of the holding grooves in the pair are formed in the insulation coating(Fig 5 shows the walls of the groove(element 9) to be formed in the insulation member (element 8)) :

and an electrical insulation member for closing the slot opening(Fig 5,10 is a wedge container made of the same material as insulation member(element 8)) is inserted into and held between the holding grooves in the pair(the wedge container is inserted into and held between the holding grooves).



2. As per (Currently amended) dependent claim 3:

The stator in the rotating electric machine according to Claim 2 1, wherein;  
a depth of each of the holding grooves in the pair is smaller than a thickness of the  
insulation coating (Fig 5, A shows a groove being formed (element 9) having a depth  
which is smaller than the thickness of the insulating member (element 8)).

3. As per (Original) dependent claim 4:

The stator in the rotating electric machine according to Claim 1, wherein;  
each groove wall of the holding grooves in the pair has a groove bottom wall and a pair  
of groove side walls opposing to each other; and  
the groove bottom wall and the pair of groove side walls are formed in the insulation  
coating (Figure 5, (elements A, groove side wall and groove bottom wall) shows the

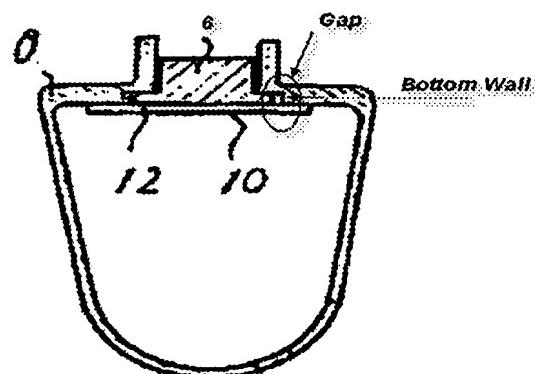
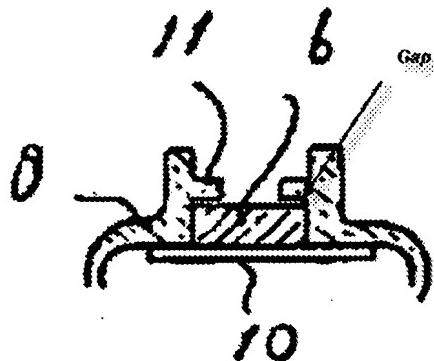
Art Unit: 2834

groove wall of the holding grooves having a bottom wall, two side walls opposing each other and formed in the insulating member (element 8)).

4. As per (Original) dependent claim 5:

The stator in the rotating electric machine according to Claim 4, wherein a clearance is formed between one of the groove side walls in the pair and the electrical insulation member (Figure 7 shows a clearance or gap formed between one of the groove side walls (the walls of element 11 which is a protrusion) and the insulating member(element 8)).

第 7 図



第 9 図

5. As per (Original) dependent claim 6:

The stator in the rotating electric machine according to Claim 4, wherein;

a clearance is formed between the groove bottom wall and the electrical insulation member (Figure 9 shows a gap between the groove bottom wall and the insulation member (element 8)).

6. As per (Original) dependent claim 7:

The stator in the rotating electric machine according to Claim 4, wherein; the inner one of the groove side walls in the pair positioned on an inner side of each slot is formed to tilt in a depth direction of each slot (Figure 1 shows the bottom wall indicating the depth of the slot. The opposite end of the slot depth is indicated by the slot opening. The side wall on the inner side of each slot is formed to tilt in the depth direction of the slot).

7. As per (Original) dependent claim 8:

The stator in the rotating electric machine according to Claim 1, wherein; the stator winding has a width in a circumferential direction smaller than an interval between the slot side walls in the pair; and the width in the circumferential direction is smaller than a width of the slot opening in the circumferential direction (Figure 1 shows the windings having a smaller width in a circumferential direction than the gap between the slot sidewalls and the slot opening).

8. As per (Original) dependent claim 9:

The stator in the rotating electric machine according to Claim 1, wherein the stator winding includes plural winding members inside each slot: each winding member of the plural winding members has a width in a circumferential direction smaller than an interval between the slot side walls in the pair and a thickness in a radius direction smaller than the width in the circumferential direction; and the plural winding members are disposed in line along the pair of slot side walls (Figure 1 shows a stator with plural winding members having a width in a circumferential direction smaller than the interval between the pair of slot sidewalls. It also shows the windings to be disposed in line along the pair of slot sidewalls and to have a thickness in a radius direction smaller than the width in the circumferential direction).

9. As per (Original) dependent claim 10:

The stator in the rotating electric machine according to Claim 1, wherein; plural teeth portions of the stator core are formed between respective slots: each teeth portion of the plural teeth portions has a hanging portion that hangs out in a circumferential direction at the vicinity of the inner peripheral surface of the stator core: the pair of slot side walls extends onto the hanging portions: the insulation coating extends onto the hanging portions: and the pair of holding grooves is formed in the insulation coating on the hanging portions (Figure 5 shows a stator having teeth portions formed between the slots and having a hanging portion, which hang out in a circumferential direction close to the inner peripheral surface of the stator core (element 1). The pair of sidewalls along with the

insulating member extends onto the hanging portions. Holding grooves are formed in the insulation member).

10. As per (new) dependent claim 11:

The stator in the rotating electric machine according to Claim 3, wherein the depth of each of the holding grooves is defined in the direction of the thickness of the insulation coating (Fig 5 above of Ikeda et al shows the depth of the holding grooves (element 9) to be defined in the direction of the thickness of the insulation coating (element 8).

11. As per (new) dependent claim 12:

A method of electrically isolating a stator winding disposed inside each of the plural slots in a rotating electric machine wherein each slot has a slot peripheral wall and a slot opening that opens in the inner peripheral surface and the slot peripheral wall of each slot has a slot bottom wall and a pair of slot side walls opposing to each other and continuing to the slot bottom wall, the method comprising:

spraying a powder of an electrical insulation material on a slot peripheral wall of each slot to form an insulation coating;

cutting into the insulation coating on the pair of slot side walls at the vicinity of the slot opening to form a pair of holding grooves opposing to each other; and

inserting an electrical insulation member between the holding grooves for closing the slot opening, wherein the insulation coating is formed over continuously from the slot

bottom wall to the pair of slot side wall and groove walls of the holding grooves are formed in the insulation coating.

This limitation is a product by process limitation. The method of forming the device is not germane to the issue of patentability of the device itself. This limitation does not structurally distinguish the claim over the prior art.

#### ***Response to Arguments***

12. Applicant's arguments, filed 8/10/2007, with respect to the rejection(s) of claim(s) 1 and 2 under USC 102(b) have been fully considered are not persuasive.

13. As per applicant's first argument regarding amended claim 1 that Ikeda et al fails to disclose "*the slot peripheral wall is covered with a sprayed powder coating of an electrical insulation material*", examiner would like to re-assert to applicant that Ikeda et al teaches insulation and not the method of applying or making the insulation.. This limitation is a product-by process limitation. The method of forming the device is not germane to the issue of patentability of the device itself. This does not structurally distinguish the claim over the prior art. Therefore the method of forming the device has not been given patentable weight.

14. As per applicant's second argument regarding Ikeda et al fails to disclose, "holding grooves formed of cuts into the insulation", examiner would like to point out that it is well known in the art to cut grooves into an insulation. Further, applicant argues that "*in the case that the insulator is a thin film having a thickness of micron order, it is difficult to insert the insulator in the slot and that breakage is almost unavoidable*",

examiner must point out to applicant that if it would be difficult to insert an insulator (having thickness in the micron range), it would be even more prone to breakage when the claimed "holding grooves are formed of cuts into the (micron-range-thick) insulation coating". Also, Fig 5 of Ikeda et al clearly shows the grooves (element 9) to be formed in the insulation member (element 8). Examiner believes applicant's arguments are moot since they seem to contradict with the amended claims, and further in view of examiner's answers. This limitation is a product-by process limitation. The method of forming the device is not germane to the issue of patentability of the device itself. This does not structurally distinguish the claim over the prior art. Therefore the method of forming the device has not been given patentable weight.

15. According to § 2111 of the MPEP, claims must be given their broadest reasonable interpretation. A portion of this section is cited below for the practitioner's convenience:

During patent examination, the pending claims must be "given >their< broadest reasonable interpretation consistent with the specification." >*In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000).< Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. See *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969).

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

#### ***Conclusion***

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Naishadh N. Desai whose telephone number is (571) 270-3038. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2204. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Naishadh N Desai  
Patent Examiner

